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WHAT IS CLAIMED IS:

1. A turbogenerator comprising:
 - 5 a) a turbine prime mover;
 - b) an induction alternator;
 - c) an excitation system for said induction alternator comprising a plurality of static capacitors and switches;
 - d) a cycloconverter connected to said induction alternator, and
 - e) a control circuit to control said excitation system and said cycloconverter
- 10 2. The turbogenerator of claim 1 wherein said induction alternator comprises a plurality of parallel windings thereby allowing elimination of a transformer.
- 15 3. The turbogenerator of claim 2 wherein said induction alternator comprises three parallel windings.
- 20 4.. The turbogenerator of claim 1 further comprising an independent alternating current power source in circuit with said cycloconverter to permit starting of the prime mover using the induction alternator.
- 25 5. The turbogenerator of claim 1 wherein said cycloconverter is naturally commutated.
- 30 6. The turbogenerator of claim 5 wherein said cycloconverter comprises a plurality of switches.
7. The turbogenerator of claim 6 wherein said cycloconverter comprises a plurality of silicon controlled rectifiers.

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8. The turbogenerator of claim 1 wherein said controller is a programmable logic controller.

9. A transformerless turbogenerator comprising:

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- a) a turbine prime mover;
- b) an induction alternator comprising a plurality of parallel windings;
- 10 c) an excitation system for said induction alternator comprising a plurality of static capacitors and switches;
- d) a naturally commutated cycloconverter connected to said induction alternator, and
- 15 e) a control circuit to control said excitation system and said cycloconverter

10. The turbogenerator of claim 9 further comprising an independent alternating current power source in circuit with said cycloconverter to permit starting of the prime mover using the induction alternator.

20 11. The turbogenerator of claim 9 wherein said induction alternator comprises three parallel windings.

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12. The turbogenerator of claim 9 wherein said cycloconverter comprises a plurality of switches.

30 13.. The turbogenerator of claim 12 wherein said cycloconverter comprises a plurality of silicon controlled rectifiers.

14. The turbogenerator of claim 9 wherein said controller is a programmable logic controller.

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